

Arc Plate:

Diameter = 160mm

Diameter of arc slots = 3mm

Mass = 63.27 grams

Volume = 63265.19 cubic millimeters

Surface area = 42769.41 square millimeters

Principal axes of inertia and principal moments of inertia: (grams * square millimeters)

Taken at the center of mass.

$I_x = (1.00, 0.00, 0.00)$ $P_x = 105645.96$

$I_y = (0.00, 1.00, 0.00)$ $P_y = 105645.96$

$I_z = (0.00, 0.00, 1.00)$ $P_z = 211162.74$

Moments of inertia: (grams * square millimeters)

Taken at the center of mass and aligned with the output coordinate system.

$L_{xx} = 105645.94$ $L_{xy} = 0.00$ $L_{xz} = 0.00$

$L_{yx} = 0.00$ $L_{yy} = 105645.97$ $L_{yz} = 0.00$

$L_{zx} = 0.00$ $L_{zy} = 0.00$ $L_{zz} = 211162.74$

Moments of inertia: (grams * square millimeters)

Taken at the output coordinate system.

$I_{xx} = 105645.94$ $I_{xy} = 0.00$ $I_{xz} = 0.00$

$I_{yx} = 0.00$ $I_{yy} = 105645.97$ $I_{yz} = 0.00$

$I_{zx} = 0.00$ $I_{zy} = 0.00$ $I_{zz} = 211162.74$

Output shaft:

Diameter = 8mm

Density = 0.00 grams per cubic millimeter

Mass = 1.93 grams

Volume = 1926.93 cubic millimeters

Surface area = 1208.18 square millimeters

Principal axes of inertia and principal moments of inertia: (grams * square millimeters)

Taken at the center of mass.

$I_x = (0.00, 0.00, 1.00)$ $P_x = 12.45$

$I_y = (0.64, -0.77, 0.00)$ $P_y = 343.81$

$I_z = (0.77, 0.64, 0.00)$ $P_z = 343.86$

Moments of inertia: (grams * square millimeters)

Taken at the center of mass and aligned with the output coordinate system.

$L_{xx} = 343.84$ $L_{xy} = -0.02$ $L_{xz} = 0.09$

$L_{yx} = -0.02$ $L_{yy} = 343.84$ $L_{yz} = -0.11$

$L_{zx} = 0.09$ $L_{zy} = -0.11$ $L_{zz} = 12.45$

Moments of inertia: (grams * square millimeters)

Taken at the output coordinate system.

$I_{xx} = 3444.88$ $I_{xy} = -0.02$ $I_{xz} = -0.31$

$I_{yx} = -0.02$ $I_{yy} = 3444.87$ $I_{yz} = 0.38$

$I_{zx} = -0.31$ $I_{zy} = 0.38$ $I_{zz} = 12.45$